CLAIMS

WHAT IS CLAIMED IS:

1. A system for assessing a health and functionality of a locomotive friction modifying system wherein the locomotive has a friction modifying applicator associated with a wheel of the locomotive for applying a friction modifying agent to a rail on which the wheel is traversing, the system comprising:

a sensor for detecting a predetermined operational condition of the locomotive;

a controller associated with the sensor and responsive to input from the sensor for determining a per unit creep of an axle of the locomotive, determining a tractive effort of the axle of the locomotive, determining a friction modifying applicator state for the applicator associated with the axle, and comparing the determined per unit creep of the axle, the tractive effort of the axle and the state of the friction modifying applicator associated with the axle to a predetermined value indicative of the health and functionality of the locomotive friction modifying system and providing an indication of the health and functionality of the locomotive friction modifying system.

2. The system of claim 1 wherein the friction modifying agent in the friction modifying applicator is one that increases a coefficient of friction at a contact area for enhanced adhesion.

3. The system of claim 1 wherein the friction modifying agent in the friction modifying applicator is one that decreases a coefficient of friction at a contact area for enhanced adhesion.

4. The system of claim 1 wherein the friction modifying agent in the friction modifying applicator is one that removes another friction modifying agent from a contact area.

5. The system of claim 2 wherein the friction modifying agent is one from a group of agents comprising sand, sand-like material, and air.

6. The system of claim 3 wherein the friction modifying agent is one from a group of agents comprising air, steam, water, lubricating fluid, and oil.

7. The system of claim 1 wherein the controller provides the indication of the health and functionality of the locomotive friction modifying system by providing a signal to a locomotive operator, a designated maintainer, remote monitoring equipment, or remote monitoring personnel.

8. The system of claim 1 wherein the controller determines the friction modifying applicator state for the applicator by determining if an applicator control valve is closed or open, or if a flow from an applicator is blocked.

9. The system of claim 1 wherein the controller is unable to determine the health and functionality of the locomotive friction modifying system and provides a signal to that effect.

10. The system of claim 1 wherein the controller utilizes a predetermined length of time during which no change in the health and functionality of the locomotive friction modifying system occurs to provide a signal indicating that the health and functionality of the locomotive friction modifying system is unknown.

11. A method for assessing a health and functionality of a locomotive friction modifying system wherein the locomotive has a friction modifying applicator associated with a wheel supported on an axle of the locomotive for applying a friction modifying agent to the rail on which the wheel is traversing, comprising:

determining per unit creep of an axle of the locomotive;

determining tractive effort of the axle of the locomotive;

determining friction modifying applicator state for the applicator associated with the axle;

comparing the determined per unit creep of the axle, tractive effort of the axle and state of the friction modifying applicator associated with the axle to a predetermined value indicative of the health and functionality of the locomotive friction modifying system and providing an indication of the health and functionality of the locomotive friction modifying system.

12. The method of claim 11 wherein the step of applying at least one friction modifying agent includes applying one that increases a coefficient of friction at a contact area.

13. The method of claim 11 wherein the step of applying at least one friction modifying agent includes applying one that decreases a coefficient of friction at a contact area.

14. The method of claim 11 wherein the step of applying at least one friction modifying agent includes applying one that removes a friction modifying agent from a contact area.

15. The method of claim 12 wherein the step of applying at least one friction modifying agent includes applying at least one selected from a group of agents comprising sand, sand-like material, and air.

16. The method of claim 13 wherein the step of applying at least one friction modifying agent includes applying at least one selected from a group of agents comprising air, steam, water, lubricating fluid, and oil.

17. The method of claim 11 wherein the step of providing the indication of the health and functionality of the locomotive friction modifying system is done by providing a signal to a locomotive operator, a designated maintainer, remote monitoring equipment, or remote monitoring personnel.

18. The method of claim 11 wherein the step of determining the friction modifying applicator state for the applicator is done by determining if an applicator control valve is closed or open, or if a flow from the applicator is blocked.

19. The method of claim 11 wherein the health and functionality of the locomotive friction modifying system cannot be determined, further comprising generating a signal to that effect.

20. The method of claim 11 wherein after a predetermined length of time during which no change in the health and functionality of the locomotive friction modifying system has expired, providing a signal indicating that the health and functionality of the locomotive friction modifying system is unknown.